

**Prineville Reservoir  
Resource Management Plan  
and Master Plan  
Draft Environmental Assessment**



**U.S. Bureau of Reclamation  
Pacific Northwest Region  
Lower Columbia Area Office**



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## **ABBREVIATIONS AND ACRONYMS**

ACHP	Advisory Council on Historic Preservation
af	acre-feet
AMP	Allotment Management Plan
ARPA	Archeological Resources Protection Act
ATV	All-Terrain Vehicle
AUM	Animal Unit Month
B.P.	Before present
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BMP	Best Management Practice
C/OS	Conservation/Open Space (areas)
CFR	Code of Federal Regulations
cfs	Cubic feet per second
COE	U.S. Army Corps of Engineers
CRMP	Cultural Resources Management Plan
cy	cubic yards
DOI	Department of Interior
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FLPMA	Federal Land Policy Management Act
FONSI	Finding of No Significant Impact
FR	Federal Register
FWCA	Fish and Wildlife Coordination Act
FWS	U.S. Fish and Wildlife Service
HIP	Habitat Improvement Plan
HUD	Housing and Urban Development
IPM	Integrated Pest Management
ITAs	Indian Trust Assets
KOP	Key Observation Point
MOU	Memorandum of Understanding
MP	Master Plan
MSA	Magnuson-Stevens Act
msl	Mean sea level
mya	million years ago
NAGPRA	Native American Graves Protection and Repatriation Act
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act



## **ABBREVIATIONS AND ACRONYMS (continued)**

NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
O&M	Operations and Maintenance
ODA	Oregon Department of Agriculture
ODEQ	Oregon Department of Environmental Quality
ODFW	Oregon Department of Fish and Wildlife
ODOT	Oregon Department of Transportation
ODPR	Oregon Department of Parks and Recreation
OID	Ochoco Irrigation District
ONHP	Oregon Natural Heritage Program
ORV	Off-road Vehicle
OSMB	Oregon State Marine Board
OSU	Oregon State University
PAM	Planning Aid Memorandum
PPM	parts per million
PRRS	Prineville Reservoir Reallocation Study
PWC	Personal Water Craft
RBS	River Basin Survey
Reclamation	U.S. Bureau of Reclamation
RM	river mile
RMP	Resource Management Plan
RR	Rural Residential (areas)
RV	Recreational Vehicle
SCORP	Statewide Comprehensive Outdoor Recreation Plan
SH	State Highway
SHPO	State Historic Preservation Officer
SOD	Safety of Dams
SR	State Route
SWA	State Wildlife Area
TCPs	Traditional Cultural Properties
TMDL	Total Maximum Daily Load
UFAS	Uniform Federal Accessibility Standards
USC	United States Code
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
VRMS	Visual Resource Management System
WMA	Wildlife Management Area
WMU	Wildlife Management Unit

# **1.0 INTRODUCTION AND BACKGROUND**

## **1.1 Introduction**

This Draft Environmental Assessment (EA) evaluates alternatives for the proposed Prineville Reservoir Resource Management Plan (RMP) and the State Park Master Plan (MP). The RMP was developed by the U.S. Bureau of Reclamation (Reclamation) and its managing partner, the Oregon Parks and Recreation Department (OPRD), to manage resources, facilities, and access on Reclamation lands and waters. The RMP evaluated in this Draft EA is an update of the September 1992 Prineville Reservoir RMP (Reclamation 1992). This combined Resource Management Plan and Master Plan will be collectively referred to as the RMP in this document.

## **1.2 Authority**

Title 28 of Public Law 102-575, Section 2805 (106 Stat. 4690; Reclamation Recreation Management Act of October 30, 1992) provides Reclamation with authority to prepare resource management plans.

## **1.3 Purpose and Need**

The purpose of this Federal action is to update the RMP prepared by Reclamation in 1992. The current (1992) document is out of date and changes are necessary to protect natural resources and provide facilities for the increased recreation demand. This Draft EA on the RMP alternatives will be used to determine whether to issue a Finding of No Significant Impact (FONSI) or a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act of 1969 (NEPA). An EA is required by NEPA for any Federal action that may have a significant impact on the environment.

NEPA requires Reclamation to explore a range of possible alternative management approaches and assess the potential environmental effects of these actions. Three alternatives are evaluated and compared in this document, including a no action alternative and a preferred alternative. The impacts of each alternative were evaluated for the following affected resource topics: hydrology and water quality; soils; vegetation; fish and wildlife; threatened, endangered, and sensitive species; recreation; land use; socioeconomics; public services and utilities; environmental justice; cultural resources; paleontology; Indian sacred sites; Indian Trust Assets (ITAs); visual resources; and transportation and access. Project scoping and preliminary analyses of air quality, noise, topography, and geology indicated that there are no potential impacts to these resources; therefore, these resource topics are not further evaluated in this Draft EA.

The existing RMP was completed in 1992 and was designed as a 10-year plan (Reclamation 1992). It has served as a valuable planning tool for Reclamation's management of the lands and resources around the reservoir. The RMP update reviews the results of the 1992 RMP, provides updated information on recreation and other uses of Reclamation lands and resources, and provides updated management recommendations. The RMP update will be used as the basis for directing activities on Reclamation lands and the reservoir in a way that maximizes overall public and resource benefits consistent with Reclamation goals. The RMP will be reviewed, reevaluated, and revised to reflect changing conditions and management objectives on an as-needed basis. Opportunities for public involvement will be provided on changes that affect resources or public use.

# **1.0 Introduction and Background**

## **1.4 Proposed Federal Action**

For this Draft EA, the proposed Federal action is implementation of the new RMP and MP. The intent of the RMP is to serve as a blueprint for the future use, management, and site development of Reclamation lands at Prineville Reservoir and the associated State Wildlife Area (SWA) for the next 10 years. While the RMP planning period is for the next 10 years, the Master Plan projects needs for the next 25 years, allowing for a phased approach to recreation site development. Reservoir operations are not part of the RMP and are not considered in this Draft EA. The RMP identifies goals and objectives for resource management, specifies desired land and resource use patterns, and explains the policies and actions that would be implemented during the 10-year life of the plan to achieve these goals and objectives. Draft goals and objectives for the Prineville Reservoir RMP are included as Appendix A.

## **1.5 Location and General Description of Affected Area**

The study area is located on the Crooked River in Crook County, Oregon about 20 miles upstream from Prineville, Oregon (Figure 1.5-1). The City of Bend is about 25 miles to the southwest. The Congressional Act of August 6, 1956 (Chapter 980, 70 Stat. 1058) authorized construction by the Secretary of the Interior of the Crooked River Federal Reclamation Project for the purpose of furnishing water for irrigation, flood control, and fish and wildlife management. Bowman Dam was constructed between 1958 and 1961 as part of the Crooked River Project. Under this Congressional authorization, the Secretary of the Interior was authorized to construct minimal basic public recreational facilities and to arrange for the operation and maintenance of these facilities by an appropriate agency or organization.

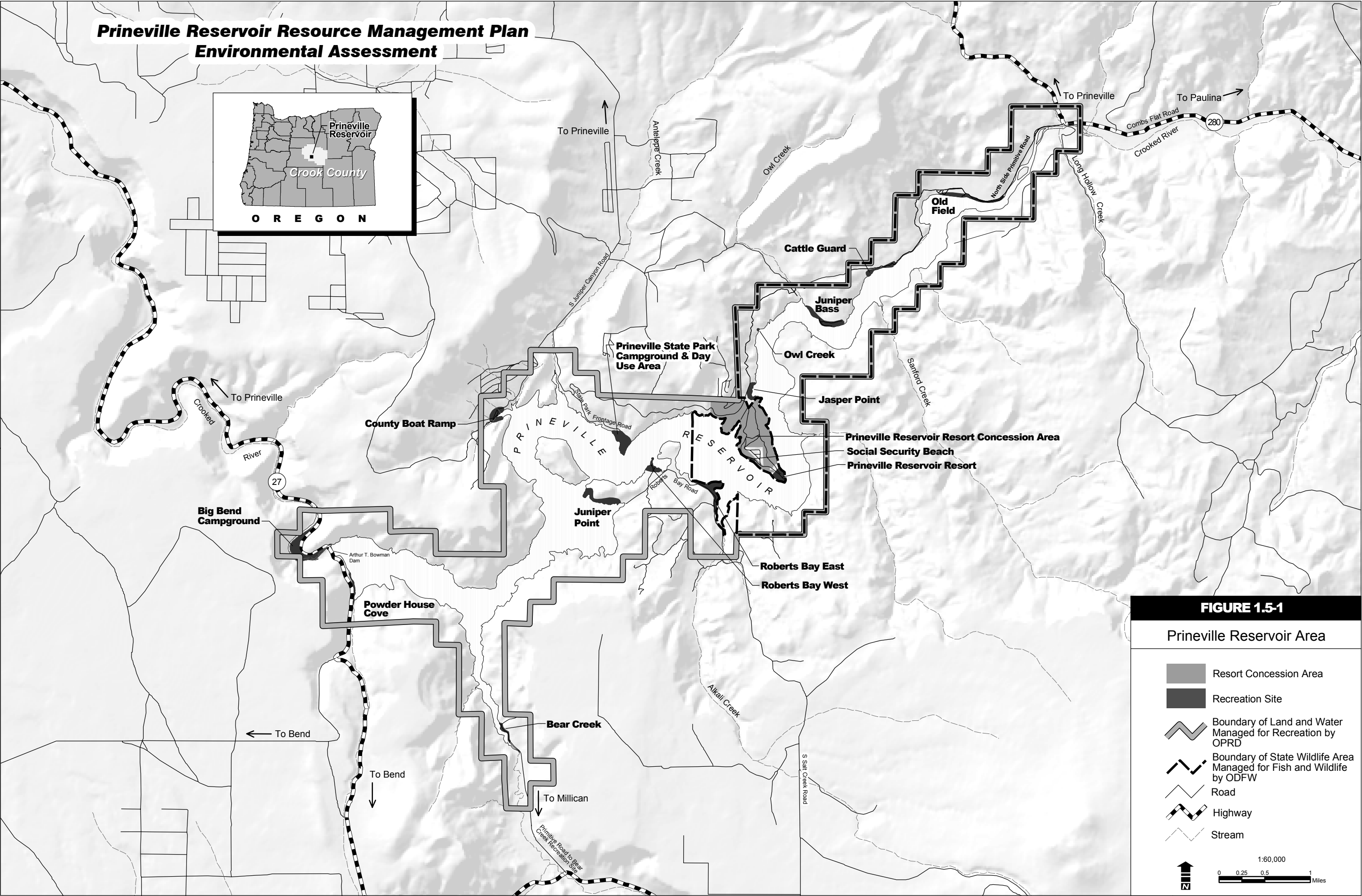
The study area, which includes Reclamation lands at Prineville Reservoir, Big Bend Campground immediately downstream of Bowman Dam, Prineville SWA, Prineville State Park, and the Prineville Reservoir Resort, is shown in Figure 1.5-1.

### **1.5.1 Prineville Reservoir Overview**

Prineville Reservoir is the major storage reservoir facility of the Crooked River Project and has a total storage capacity of 150,216 acre-feet (af) and a water surface area of 3,030 acres at normal full pool elevation. The dam facilities are operated by the Ochoco Irrigation District (OID) under the general supervision of the Area Manager of Reclamation's Lower Columbia Area Office in Portland, Oregon. Reclamation's Bend Field Office provides the day-to-day contact/coordination with OID on operational and maintenance issues associated with the project. The project authorizes a 10 cubic feet-per-second (cfs) minimum flow below the dam.

Reclamation lands generally consist of a strip of land around the reservoir (including 43 miles of shoreline), lands under the reservoir, and Big Bend Campground located below the dam. Most lands surrounding the Reclamation lands are managed by the U.S. Bureau of Land Management (BLM). A small portion of surrounding land is privately owned. OPRD is the non-Federal recreation managing partner on all lands under Reclamation jurisdiction surrounding the reservoir, with the exception of the Prineville Reservoir Resort, which is operated by a private party. In addition, Oregon Department of

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Source: USBR, 2001; OPRD, 2001; EDAW, 2001.

Fish and Wildlife (ODFW) manages the upper reservoir area as the Prineville SWA. BLM, through an interagency agreement with Reclamation, manages grazing, timber, and mineral rights on Reclamation lands. Bottero Park is a privately owned inholding of 11 acres that consists of 15 homes.

The study area consists of lands under Reclamation jurisdiction including: Prineville Reservoir (3,030 acres) and adjacent lands (5,460 acres); the Prineville SWA located at the eastern end of the reservoir; Big Bend Campground immediately downstream of Bowman Dam; Prineville State Park on the north side of the reservoir near Antelope Creek; Jasper Point State Park east of Prineville State Park; and Prineville Reservoir Resort, which is under a concession agreement with Reclamation, located on the north shore of the reservoir adjacent to Jasper Point State Park (Figure 1.5-1). Collectively, these lands and waters associated with Prineville Reservoir under Reclamation jurisdiction are called “Reclamation lands” throughout this Draft EA.

Reclamation, through its cost share program and partnerships, has developed public recreation facilities on the north shore of the reservoir; Prineville State Park, which includes a day use area and campground, and Jasper Point boat ramp and campground. These developed sites provide campgrounds and recreation vehicle (RV) hook-ups, boat access and parking, day use recreation, and fully equipped shower and sanitation facilities. Several other undeveloped, primitive, or dispersed recreation sites, also managed by OPRD, are distributed around the reservoir. Big Bend Campground, located below the dam on the Crooked River, is also part of Reclamation lands. Big Bend is cooperatively managed by BLM under agreement with OPRD due to its proximity to other BLM sites along the Crooked River, below the dam. Prineville Reservoir Resort is a 190-acre resort that offers a campground with hook-ups, a café and convenience store, a 7-unit motel, and a boat ramp with moorage and associated services.

The Prineville SWA extends along the north and south shore of the reservoir and occupies approximately 2,230 acres of land. Wildlife management goals of the SWA include habitat protection; wintering deer, elk, and waterfowl management; control of recreation activity; maintenance of boundary fencing for natural resource protection; and management of hunting. A primary goal of the SWA is the maintenance and improvement of the area as winter range for deer and elk.

The reservoir and adjacent lands have become increasingly important recreation sites since completion of the 1992 RMP. The City of Prineville is the primary gateway to the reservoir, but access from the City of Bend has been greatly improved from the recent Crook County upgrade of the Alfalfa/Market Road. An increasing population in Central Oregon and the Willamette Valley is largely responsible for the increased recreation use of Prineville Reservoir. Central Oregon’s three counties (Crook, Deschutes, and Jefferson) were among the fastest growing in the state during the past decade. Deschutes led the state with a 54 percent growth rate while Jefferson ranked fourth (38 percent) and Crook ranked fifth (34 percent increase) (U.S. Census 2001). For the year 2000, there were 102,694 overnight visits at the Prineville State Park and 85,432 for Jasper Point Campground. Visits for 2001 were slightly lower because of the drought and low reservoir levels (pers. comm., Perkins 2002).

Primary road access to Prineville Reservoir is provided by State Route 27 from Prineville or Bend, Juniper Canyon Road, and the Combs Flat Road (Paulina Highway) at the east end of the reservoir. Road access to the north shore is good to Jasper Point. A 6.3-mile long primitive road provides access between Jasper Point and Combs Flat Road. This North Side Primitive Road traverses the Prineville SWA, which has seasonal closures to prevent disturbance of wintering deer and other wildlife.

Access to the south side of the reservoir is extremely limited as most of the south shoreline is roadless and accessible only by boat. Roberts Bay, a popular dispersed camping area on the south shoreline, is accessed via Salt Creek Road, a two-lane gravel road from State Route 27. Access to the Bear Creek Arm requires some travel on a single-lane primitive road adjacent to Bear Creek. The potential damage by recreation users to natural resources with increasing recreation use of Reclamation lands is an important reason for revising the RMP.

## **1.5.2 River and Reservoir System Operations**

As stated earlier, the RMP does not address reservoir operations; however, system operations are summarized below to provide context. Except for flood control operations and fish and wildlife releases, all inflow is stored in the reservoir and released as required for irrigation purposes. The Ochoco Irrigation District manager coordinates reservoir releases to meet the water supply needs of the irrigation district and individual water users. A Congressionally mandated minimum flow of 10 cfs downstream of Bowman Dam is required when releases are not being made for irrigation or flood control, for the benefit of fish and wildlife. In recognition of the Crooked River's regionally outstanding natural and recreational resources under the Federal Wild and Scenic Rivers Act, Reclamation has administratively increased the minimum reservoir release to 75 cfs to further protect and improve the river's attributes. The 75 cfs target streamflow is met provided sufficient water supplies are available and contractual obligations are met. This 75 cfs is passed after the irrigation season, which usually extends from April 16 through October 15. These changes in reservoir operations were initiated in February 1990 and will continue unless modified by the Prineville Reservoir Reallocation Study (PRRS) recommendations.

Table 1.5-1 lists some specifications of Prineville Reservoir. The Crooked River Project generally experiences two peaks in irrigation use, one in late May and the other in mid-July. Irrigation releases from Prineville Reservoir vary with storage capacity, rainfall, temperature, and crop needs. Flood

**Table 1.5-1: Project specifications.**

<b>Normal Maximum Water Surface</b>	
Elevation	3,234.8 ft
Storage	150,216 af
Surface Area	3,030 ac
Shoreline	43 miles
<b>Inactive (Minimum) Pool</b>	
Elevation	3,114 ft
Storage	260 af
Surface Area	124 ac
<b>Allocation of Capacity</b>	
Total Storage	150,216 af (100%)
Active Storage	148,633 af (99%)
Dead Pool & Inactive Storage	1,583 af (1%)
Total Contracted Space	68,273 af (45%)
Total Uncontracted Space	80,360 af (53%)
Joint Use Storage (Flood Control)	60,021 af
<b>Bowman Dam</b>	
Structural Height	245 ft
Crest Elevation	3,264 ft
Crest Length	800 ft
Spillway Crest Elevation	3,234.8 ft
Spillway Capacity at Elevation 3257.9 ft	8,120 cfs
Source: Reclamation 1999	

control storage governs filling the reservoir and requires that 60,000 af of vacant space be available each year from November 15 to February 15. The minimum requirement of vacant space is reduced to 10,000 af on March 15, with full pool reached on about March 31. The goal of the flood control operation is to limit outflow from the reservoir to below 3,000 cfs. Release from Prineville Reservoir, as measured at the gaging station approximately 0.4 mile downstream from the dam, is reduced to 1,000 cfs whenever runoff would result in excessive or damaging overbank flows downstream from the mouth of Ochoco Creek. At all other times, a release of 3,000 cfs is not exceeded if flood control storage is available.

A Reclamation study on the sedimentation rate of the reservoir (Reclamation 1999) indicates that the difference in volume between the original (1960 survey) and the 1998 measured reservoir capacity for Prineville Reservoir was 4,586 af below spillway crest elevation at 3,234.8 feet. The estimated average annual rate of lost capacity from sedimentation was 122.3 af/year.

### **1.5.3 Land Management Categories at Prineville Reservoir**

The 1992 RMP addressed Reclamation lands at Prineville Reservoir in terms of the following management categories, which have been retained in development of alternatives for the updated RMP:

- Recreation
- Prineville Reservoir Resort
- State Wildlife Area (SWA)

To ensure that wildlife values are preserved as recreation use, residential use, and commercial development increase near the reservoir, the policies and habitat improvement programs contained in the 1992 RMP will be continued by Reclamation under all alternatives of this updated RMP.

#### **1.5.3.1 Recreation and Prineville Reservoir Resort**

After the completion of Bowman Dam, Reclamation issued two 50-year license agreements for administration and management of Reclamation lands. The first agreement gave Crook County the responsibility to manage recreation outside the SWA. In December 1985, Crook County terminated their license agreement with Reclamation. In 1987, Reclamation entered into a 20-year agreement with OPRD to manage recreation on all Reclamation lands and the water surface of Prineville Reservoir, excluding the resort area. In 1995 this agreement was amended to a 50-year lease to expire in 2037. Developed recreation facilities are located at Prineville State Park and at Jasper Point, located on the north shore of the reservoir.

Reclamation currently has a concession agreement with a private party to operate the 190-acre Prineville Reservoir Resort. The resort includes facilities for camping with water and electrical hookups, a 7-unit hotel, a convenience store and café, moorage, and a boat launch. This agreement expires in 2005 and will be renewed if desired by both parties and if the terms and conditions are mutually acceptable.



### 1.5.3.2 State Wildlife Area (SWA)

An important responsibility for Reclamation as a managing agency is to protect wildlife and enhance habitat. At Prineville Reservoir, this is an important function because the reservoir and adjacent Reclamation lands provide habitat for many wildlife species, particularly but not limited to the SWA.

In 1962, ODFW entered into a license with Reclamation to manage the upper end of the reservoir as the SWA. ODFW manages this 3,160-acre (2,230 acres of land and 930 acres of water) area for wildlife habitat protection and enhancement purposes. Outside of the SWA, Reclamation (in cooperation with ODFW) manages habitat on Reclamation lands. ODFW regulates hunting and fishing according to Oregon regulations. Recreation is permitted in the SWA in defined areas and is managed by OPRD. To protect wildlife resources, the south shore of the SWA from Roberts Bay to Long Hollow Creek is a boat-in day use area only. In addition, the Primitive North Side Road that extends through the SWA is closed between Jasper Point and Old Field from November 15 through April 15, and between Old Field and the Paulina Highway from December 15 through March 15 (Reclamation 1992). Recent changes to the road closure timing are discussed in Chapter 3. ODFW identified the following objectives for wildlife management at Prineville Reservoir as part of the 1992 RMP:

- Protect and enhance mule deer winter range
- Protect and enhance riparian vegetation for wildlife and bass fishery
- Improve waterfowl nesting habitat
- Protect winter feeding grounds for bald eagles
- Improve the availability and quality of wetland habitat
- Protect and enhance habitat for nongame wildlife
- Promote and create opportunities for wildlife viewing/enjoyment
- Promote a wildlife ethic/stewardship for the SWA

A Wildlife Management Plan for the Prineville Reservoir lands is currently being prepared by Reclamation and ODFW in consultation with other agencies. A preliminary list of goals and objectives is included in Appendix B. Additional NEPA documentation would be necessary upon completion of the Wildlife Management Plan.

## **1.6 Related Activities**

### **1.6.1 Bureau of Land Management Upper Deschutes RMP**

The U.S. Bureau of Land Management (BLM) is currently in a planning process for the Upper Deschutes RMP, which includes lands adjacent to Reclamation lands at Prineville Reservoir. A draft EIS for the Upper Deschutes RMP is scheduled for release in spring 2003.

## **1.6.2 Oregon Parks and Recreation Department Master Plan**

OPRD is working with Reclamation to develop a combined RMP/MP for the management of Prineville Reservoir recreation lands. While the RMP planning period is for the next 10 years, the OPRD Master Plan period is for the next 25 years. This allows for an efficient approach to developing recreation sites in a phased manner with a desired future condition clearly identified. OPRD also provides recreation management, protection, administration, and maintenance on those lands currently under a wildlife management agreement with ODFW. OPRD's lease agreement with Reclamation expires in 2037 and will be renewed if desired by both parties and if terms and conditions are mutually agreeable.

## **1.6.3 Dam Safety Study**

Reclamation is investigating the safety of Arthur R. Bowman Dam at Prineville Reservoir regarding the potential for flood waters overtopping the dam. Reclamation is evaluating the flood hydrology and risk assessment to develop a range of alternatives that offer an appropriate level of protection.

## **1.6.4 Prineville Reservoir Reallocation Study**

Congress authorized the Crooked River Project in 1956 to provide irrigation, flood control, basic minimum health and safety facilities, and fish and wildlife enhancement, requiring a minimum 10 cfs release from the dam when releases for irrigation or flood control are not occurring. Prineville Reservoir has an active storage capacity of 148,633 af; of this amount, 80,360 af remains uncontracted.

Reclamation received requests in the 1970s for formal reassignment of uncontracted space for reservoir recreation, fish, wildlife, and domestic, municipal, and industrial water supplies. Reclamation also received requests for additional irrigation contracts. Reclamation placed a moratorium on the sale of the uncontracted storage space to conduct comprehensive analyses of alternative uses of uncontracted space. Irrigation is the only use of uncontracted storage that is within the intent of the original Act; other uses require Congressional re-authorization.

Public meetings and Reclamation studies resulted in a 1980 Special Report recommending a reallocation plan to include irrigation, fish, reservoir recreation, and domestic, municipal, and industrial uses. The hearing proved contentious, Reclamation did not pursue reauthorization, and the moratorium remains in effect. Irrigators' concerns about their share of safety of dam costs at Bowman Dam rekindled the PRRS in the late 1980s. Reclamation attempted to negotiate a consensus solution among interested parties based on the information in the 1980 report, but it was unsuccessful in obtaining consensus on a reallocation plan.

Additional contract requests in the mid-1990s prompted Reclamation to pursue the most recent investigation in 1997. Cooperating agencies were convened and scoping meetings were conducted. Potential uses of uncontracted space identified included irrigation, reservoir recreation, instream flows, and domestic, municipal, and industrial uses. Reclamation has suspended further study because of funding constraints. When funding becomes available, Reclamation intends to continue an investigation.

The PRRS is not part of the RMP process, and operations of the reservoir are not under the scope of the RMP.

## **1.7 Scoping and Issues**

To ensure that a full range of alternatives would be considered during the NEPA process, Reclamation held three public meetings prior to the development of this Draft EA. Initial scoping meetings were held on March 14, 2001 in Prineville and March 15, 2001 in Portland. The meetings were advertised through media announcements sent to local media outlets and a public information newsbrief sent to approximately 350 people. The purpose of the initial meetings and the newsbrief was to collect public input on the issues that should be addressed in the alternatives for the RMP and EA. Following these meetings, an Ad Hoc Work Group was formed to assist with alternatives development and participation throughout the process. This group consists of tribal, agency, and interest group representatives, and is more thoroughly described in Chapter 4, Consultation and Coordination. A third public meeting was held on November 28, 2001 in Prineville and was also announced through local media and an expanded newsbrief mailing list. The primary purpose of the third public meeting was to refine the RMP alternatives. A fourth public meeting will be held in the fall of 2002 in Prineville, preceded by local media announcements and newsbrief mailings. The purpose of this meeting will be to gather comments on the Draft EA. The public involvement process is described fully in Chapter 4, Consultation and Coordination.

The RMP addresses all activities occurring on Reclamation lands surrounding the reservoir and at Big Bend Campground, located below the dam. Reclamation water operations are based on contractual and flood control requirements and are not part of the RMP.

Reclamation has identified several issues that need to be addressed by the RMP. These issues were presented to the public, and the list was expanded through this process. A summary list of issues follows:

- Quantity and quality of recreation use to provide at Prineville Reservoir to meet increasing demand.
- Conflicts between recreation use and wildlife habitat.
- Conflicts among recreation users, especially motorized versus non-motorized.
- Grazing management.
- Juniper management.
- Protection and conservation of important or sensitive resources, such as wildlife, fisheries, wetlands, riparian vegetation, and cultural resources.
- Vegetation management and weed control.
- Coordination with ODFW regarding management of the Prineville SWA.
- Protection of winter range for deer and elk management.
- Avoidance of recreation conflicts with wintering deer.
- Additional or expanded boat ramps, docks, and associated facilities.

- Improved access to reservoir/recreation sites.
- Trespass and requests for private land access.
- Impacts of motorized vehicles, such as off-road vehicles (ORVs).
- Hunting and fishing opportunities.
- Water quality and erosion control.
- Cultural resource protection.
- Scenic viewshed quality.
- Health and sanitation.
- Law enforcement.